Art. IV.—*Geological Notes Northern Territory, Australia.*

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(With Plates X. and XI.).

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Remarkable Sedimentation.

The accompanying plate is a faithful representation, natural size, of the surface of a two-inch core obtained in boring for coal in No. 1 Bore, Borroloola, McArthur River, at a depth of 255 feet from the surface, in sedimentary rocks, considered by Dr. Jensen, Government Geologist, as of Carboniferous age, and known as the Bukalara Beds.

In the plate the white portion represents very fine white siliceous sand, now altered to quartzite; the dark portions represent black to dark grey shales that were originally deposited as mud or silt in thin laminae. In some places extremely thin layers of sand alternate with layers of black shale.

What renders this core specially remarkable is the complicated nature of the sedimentation and the manner in which it has been modified and interfered with subsequently to deposition, and while yet in a soft condition. The original deposition no doubt was in thin layers more or less horizontally disposed, but this condition was very different to its present confused structure.

The plate, of course, does not represent a straight vertical section through the bedding, but a circular section through the beds. By joining the edges at a and b, the original cylindrical form of the core would be restored.

Dr. Jensen, to whom I am indebted for the specimen from which the photograph was taken for the plate, is of the opinion (Plate III., Bulletin No. 10, Geological Survey, Northern Territory) that worms were the cause of the extraordinary structure seen in the core, and with this view the writer coincides as the only feasible explanation. The worms must have burrowed into and through the soft, recently deposited layers of sand and silt, with the result that, in places the lamination was disturbed, or interrupted, as at the points marked c, d, e, f, g, on the plate, and at other places. In all cases the burrows were filled in with fine sand, and these sand-

Surface of 2 inch core.
Borroloola, Northern Territory, Australia.

(Natural size).